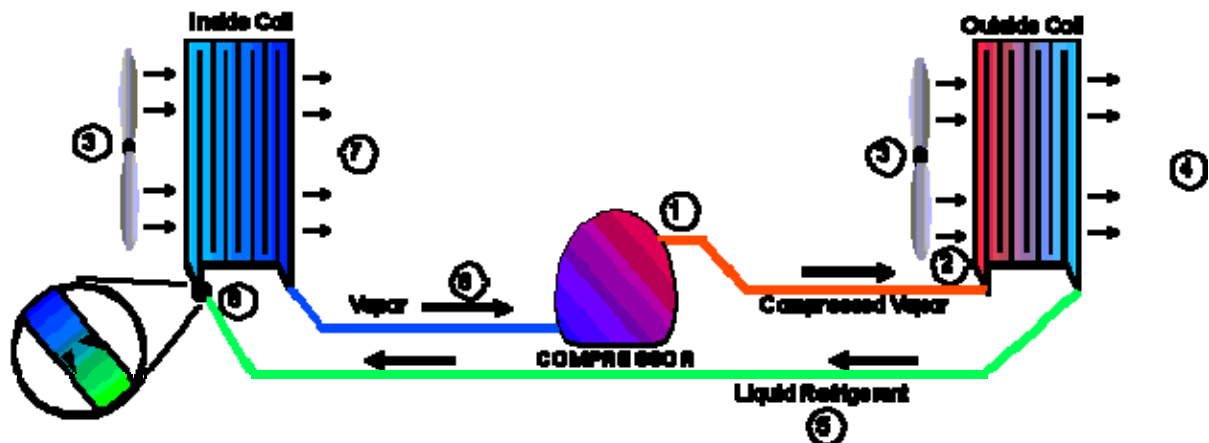


How Does Air Conditioning Work?



Air conditioning is really pretty simple when you get down to the basics. It is a sealed system composed of copper tubing, some electronics, and three basic components. A compressor and two heat exchangers or coils. The cycle goes like this;

- The compressor (1) compresses the refrigerant into high pressure vapor.
- The refrigerant vapor enters the outside coil (condenser) (2) where a fan (3) blows air across it. This cools the refrigerant by removing heat (4) and condenses it to liquid. This is the same as when steam is cooled. It will condense to liquid water.
- The refrigerant which is now liquid (5) is pushed along the refrigerant line to the inside coil (evaporator) where it encounters a metering device .
- The metering device (6) limits the amount of refrigerant entering the inside coil (evaporator) and creates a pressure drop across it.
- This allows the refrigerant to expand from a small diameter tube to a larger one.
- At this coil a fan (3) blows air across it and the refrigerant absorbs the heat in the air. This effectively cools the air exiting the coil (7) and the heat evaporates the refrigerant back to vapor.
- From here the refrigerant vapor (8) returns to the compressor to start the cycle over again.

So to summarize, the air releases heat energy to the refrigerant (cooling the air) at the inside coil (evaporator) and the refrigerant releases that heat energy into the air at the outside coil (condenser).

It all boils down to hot air blowing out of the outside coil (condenser) and cool air blowing out of the inside coil (evaporator) (usually ducted to the rooms in the home).